350 S. St. Charles St. Jasper, In. 47546
Ph. 812.482.2932  Fax 812.634.6632
www.ridetech.com

# Part # 11250299
# 62-67 Nova Level 1 Air Suspension Package

**Front Components:**

| | | |
|---|---|---|
| 1 | 11252401 | Front HQ Series Shockwaves |

**Rear Components:**

| | | |
|---|---|---|
| 1 | 11257199 | Rear AirBar 4 Link |
| 1 | 21150701 | Rear HQ Series Shockwaves |

**Compressor System:**

| | | |
|---|---|---|
| 1 | 30334000 | 3 gallon LevelPro Compressor Kit |

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# Part # 11252401
# 62-67 Chevy II & Nova Front HQ Series Shockwave

**Shockwave Assembly:**

| | | |
|---|---|---|
| 2 | 24129999 | 2.6” stroke HQ Series shock |
| 2 | 24090399 | 104mm bellow assembly |
| 2 | 90009986 | Short stud top (2”) |
| 2 | 90001639 | Nova T-Bar |
| 4 | 90009937 | T-Bar snap rings |
| 4 | 90009936 | T-Bar washer |
| 4 | 70009554 | Poly bushing half |

**Components:**

| | | |
|---|---|---|
| 2 | 90002312 | Short stud top base (2”) |
| 2 | 90001902 | Delrin ball aluminum cap |
| 2 | 90001903 | Upper delrin ball half |
| 2 | 90001904 | Lower delrin ball half |
| 2 | 90001638 | Upper Mount Plates |
| 2 | 90001637 | Lower Mount Plates |
| 2 | 31954201 | 1/4 x 1/4 swivel elbows |

**Hardware**:

| | | | |
|---|---|---|---|
| 2 | 99562003 | 9/16” Nylok nut | Upper stud |
| 4 | 99371004 | 3/8” x 1 ¼” USS bolt | T-Bar to upper arm |
| 4 | 99372002 | 3/8” USS Nylok nut | T-Bar to upper arm |
| 8 | 99373003 | 3/8” SAE flat washer | T-Bar to upper arm |
| 8 | 99311001 | 5/16” x 1” USS bolts | Upper plates |
| 8 | 99312003 | 5/16” USS Nylok nut | Upper plates |
| 16 | 99313002 | 5/16” SAE flat washer | Upper plates |

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# 11252409 Installation Instructions

1. Raise and support vehicle at a safe, comfortable working height. Let the front suspension hang freely.
2. Remove the coil spring, shock absorber, upper shock mount, lower coil spring mount, and strut tower reinforcement plate. Refer to a factory service manual for proper disassembly procedure. The strut tower reinforcement plate will be reused.

1. Place the upper Shockwave plate on top of the strut tower. Temporarily secure the plate with two 5/16” x 1” bolts, Nylok nuts and a flat washer on each side.

2. With a 5/16” bit drill the two holes closest to the engine.

3. Remove the nylocs and hold the lower plate up to the bottom of the strut tower and finger tighten the nylocs. Drop the last two bolts into place then tighten all four bolts.

4. Apply thread sealant to the air fitting and screw it into the top of the Shockwave.

5. Place the lower Delrin ball half over the stud.
6. Hold the Shockwave up to the strut tower with the stud protruding through the upper plate.

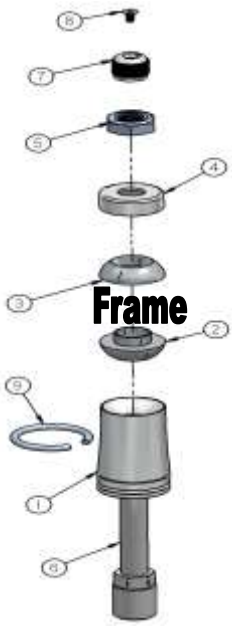
7. Slide the upper Delrin ball half over the stud, then the aluminum cap. Secure the assembly w/ a 12mm Nylok nut.

8. Raise the upper arm up to the Shockwave and fasten the Shockwave trunnion to the upper arm using two 3/8” x 1 ¼” bolts, nylocs and a washer on each side.

9. Before reinstalling the strut tower reinforcement plate route the airline.

10. Double check air spring clearance through full suspension travel.

11. Driving pressure should be around 85psi, but will vary to driver preference and vehicle weight.




1. Stud top base

2. Lower Delrin ball half

3. Upper Delrin ball half

4. Aluminum cap

5. 9/16” Nylok jam nut

6. Threaded stud

7. Adjustment knob (SA Only)

8. Screw

9. Snap ring (Coil Over Only)

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# The care and feeding of your new ShockWaves

1. Although the ShockWave has an internal bumpstop, **DO NOT DRIVE THE VEHICLE DEFLATED RESTING ON THIS BUMPSTOP. DAMAGE WILL RESULT.** The internal bumpstop will be damaged, the shock bushings will be damaged, and the vehicle shock mounting points may be damaged to the point of failure. **This is a non warrantable situation.**

2. Do not drive the vehicle overinflated or "topped out". Over a period of time the shock valving will be damaged, possibly to the point of failure. **This is a non warrantable situation!** If you need to raise your vehicle higher that the ShockWave allows, you will need a longer unit.

3. The ShockWave is designed to give a great ride quality and to raise and lower the vehicle. **IT IS NOT MADE TO HOP OR JUMP!** If you want to hop or jump, hydraulics are a better choice. This abuse will result in bent piston rods, broken shock mounts, and destroyed bushings. **This is a non warrantable situation.**

4. Do not let the ShockWave bellows rub on anything. Failure will result. **This is a non warrantable situation.**

5. The ShockWave product has been field tested on numerous vehicles as well as subjected to many different stress tests to ensure that there are no leakage or durability problems. Failures have been nearly nonexistent unless abused as described above. If the Shockwave units are installed properly and are not abused, they will last many, many years. **ShockWave units that are returned with broken mounts, bent piston rods, destroyed bumpstops or bushings, or abrasions on the bellows will not be warrantied.**

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**Part # 11257199**
**62-67 Nova Rear AirBar**

## Components:

| | | |
|---|---|---|
| 1 | 90002077 | Lower axle bracket - Driver |
| 1 | 90002078 | Lower axle bracket - Passenger |
| 1 | 90000535 | Lower shockwave mount |
| 1 | 90000536 | Lower shockwave mount |
| 2 | 90000144 | Axle tabs |
| 2 | 90000524 | Axle tabs |
| 1 | 90000539 | Upper bar mount |
| 1 | 90000540 | Upper bar mount |
| 2 | 90000533 | Upper bar bolt plate |
| 1 | 90000537 | Upper cross member |
| 2 | 90001001 | Upper bar – TW 7.375” (C-C length 9.50”) |
| 2 | 90001030 | Lower bar – WW 25.00” |
| 2 | 99250001 | ¼”-28 straight grease fitting |
| 4 | 90001085 | Poly bushing halves for lower bar |
| 4 | 90000538 | Lower bar bushing sleeve |
| 2 | 90001589 | Threaded Kevlar lined Heim end |
| 2 | 99752004 | ¾”-16 jam nut – for rod end |
| 4 | 90000552 | Aluminum spacer for Heim end |
| 4 | 90001942 | Rubber bushings pressed into bars |
| 2 | 90002285 | Square corner U bolt - Upper cross member to car |
| 2 | 70010694 | Jig brackets for upper bar installation |

Hardware Kit: (Part # 99010018)

| | | |
|---|---|---|
| 6 | 5/8”-11 x 2 ¾” Gr.5 bolt | Bars to cross member and brackets |
| 6 | 5/8”-11 Nylok jam nut | Bars to cross member and brackets |
| 12 | 3/8”-16 Nylok nut | Upper bar mount and cross member |
| 12 | 3/8” SAE flat washer | Upper bar mount and cross member |
| 4 | 1/2"-13 x 2 ¼” Gr.5 bolt | Shockwaves to mounts |
| 4 | 1/2"-13 Nylok jam nut | Shockwaves to mounts |
| 4 | 5/8”-11 x 1 ¼” Gr.5 bolt | Shockwave brackets to axle brackets |
| 4 | 5/8”-11 Nylok nut | Shockwave brackets to axle brackets |
| 8 | 7/16”-20 Nylok nut | U-bolts |
| 2 | 3/8”-16 x ¾” Gr. 5 bolt | Upper bar installation jig |
| 2 | 3/8”-16 nut | Upper bar installation jig |

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1. Raise the vehicle to a safe and comfortable working height. Use jack stands to support the vehicle with the suspension hanging freely.

2. Support the axle and remove the leaf springs, shocks, pinion snubber, and tail pipes. Refer to the factory service manual for proper disassemble procedures. Keep the factory upper shock bolts and front leaf spring mounting bolts.

1. The pinion snubber mount must be cut on the line shown in the picture. This allows more clearance of the pinion for maximum drop.

2. Remove the gas tank sending unit wire from the tank and pull it into the trunk.

3. This raised area around the gas tank sending unit wire must be flattened to allow the upper bar mount to sit against the pan. The area marked in chalk can either be pie cut, hammered flat and welded back together or cut out completely.

4. The upper bar mount will bolt to the bottom of the car using the factory shock bolts and locates off the factory shock mount.

**Note:** The bar mount will point towards the outside of the car. This is the passenger side.

5. Using the bracket as a template drill 4 7/16” holes through the pan.

6. The upper bar bolt plate can be dropped into place from the trunk. The bracket will be clamped into place using 3/8” nylocs and flat washers.

7. Lower the axle enough to slide the upper crossmember into place. The frame is wider towards the rear of the car as is the crossmember. Push it forward until it is tight between the frame rails, but make sure it is square. Drill two holes with a 7/16” drill bit.

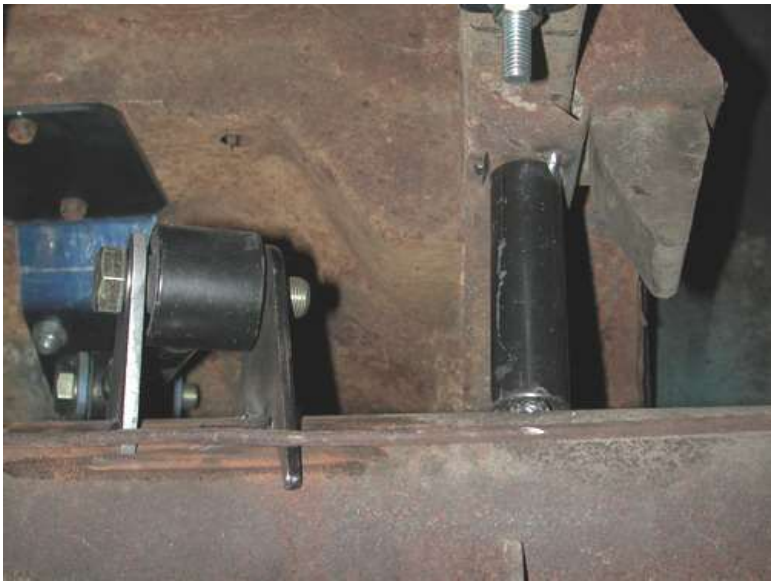
8. Remove the crossmember and drop the 3/8” U-bolt through the holes. Reinstall crossmember and tighten with 3/8” nylocs and flat washers.

Shown below:
9. Bolt the lower axle bracket to leaf spring plate on the bottom of the axle using the new 7/16” nylocs supplied. Do not tighten until the lower bar is in place.

10. Install the lower arm (the longer one) into the oem leaf spring hanger using the factory hardware. This is a polyurethane bushing and is lubricated at the factory with lithium grease. Any future lubrication can be done with any non-petroleum based lubricant.

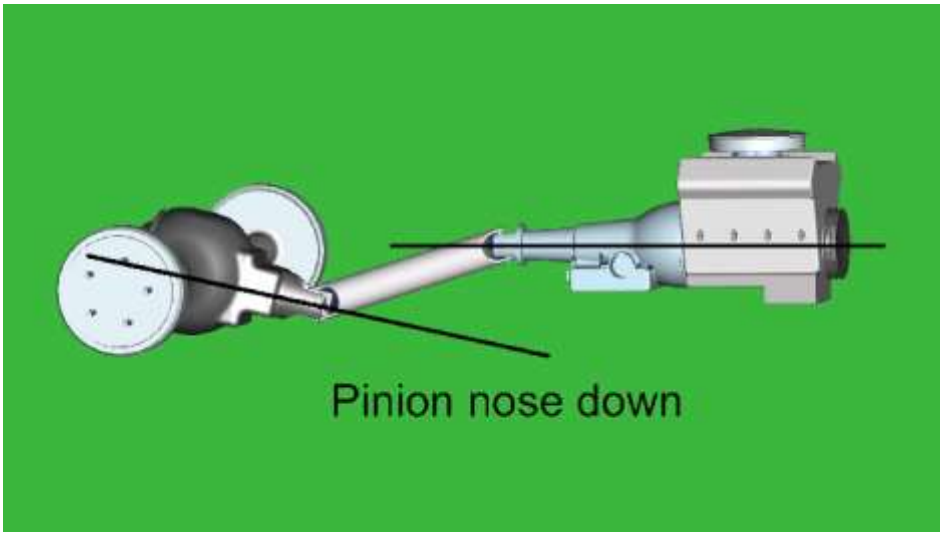
11. The other end of the lower bar will attach to the axle bracket using 5/8” x 2 3/4" bolts and nylocs. This is a rubber bushing and does not require lubrication. **Do not tighten the bar bolts <u>yet</u>.**

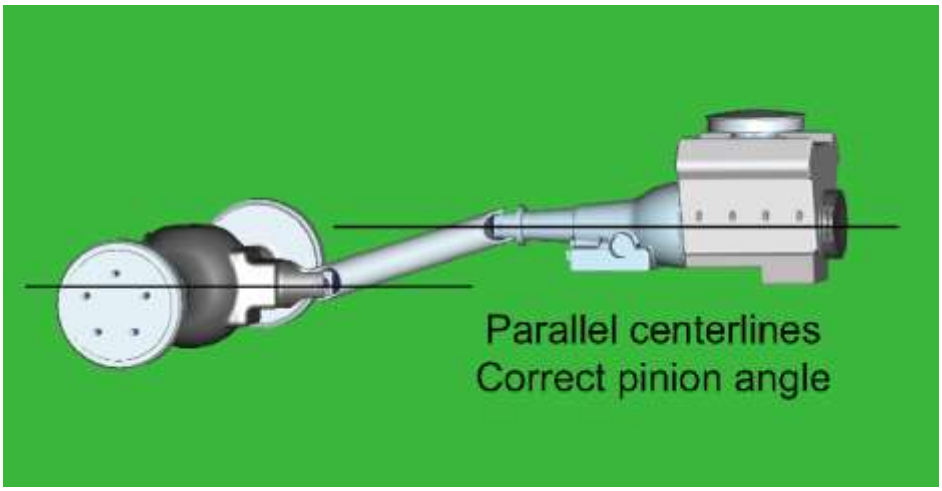
12. The lower Shockwave mount is bolted to the lower two holes of the axle bracket with two 5/8” x 1 1/2" bolts and nylocs The U shaped portion of the bracket will face toward the inside of the vehicle.

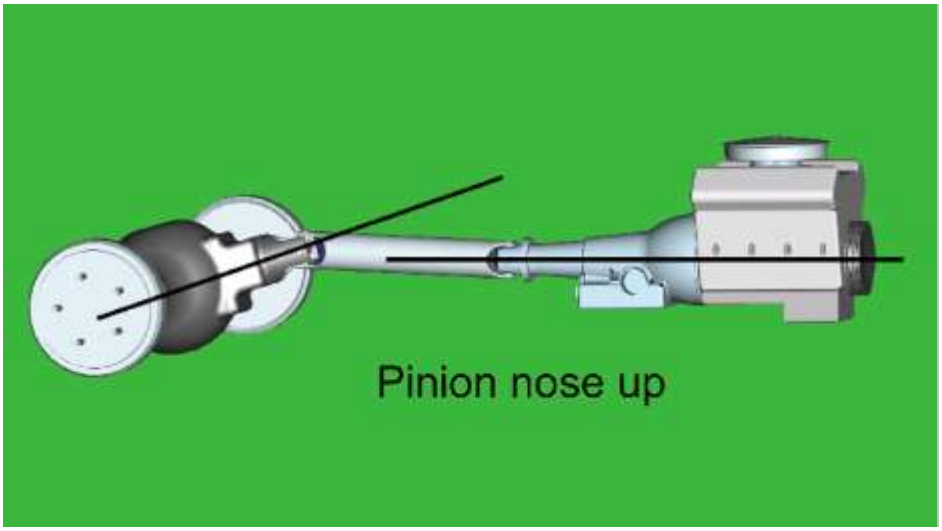


13. Bolt the axle tabs to the upper bar as shown in the picture. Then bolt the other end to the upper bar mount. **Do not weld the tabs <u>yet</u>.**

14. Before welding the tabs you must center the axle and set the pinion angle. This must be done at ride height. Raise the axle until the is 14 1/2" from center eye to center eye on the Shockwave mounts, this is ride height. One trick that we use to maintain the settings are to tack weld a 4” spacer between the axle and the frame.




15. How do you set the pinion angle? On a single-piece shaft you want to set it up where a line drawn through the center of the engine crankshaft or output shaft of the transmission and a line drawn through the center of the pinion are parallel to each other but not the same line.

A simple way to do this is to place a digital angle finder or dial level on the front face of the lower engine pulley or harmonic balancer. This will give you a reading that is 90 degrees to the crank or output shaft unless you have real problems with your balancer. At the other end, you can place the same level or angle finder against the front face of the pinion yoke that is also at 90 degrees to the centerline. If you rotate the yoke up or down so both angles match, you have perfect alignment.

Road testing will tell you if you have it right. If you accelerate and you get or increase a vibration, then the pinion yoke is too HIGH. Rotate it downward in small increments of a degree or two until the problem goes away. If you get or increase a vibration when decelerating, then the pinion yoke is too LOW. Rotate it upward to correct it.

16. Axle center is best determined by dropping a plum on the outside of the quarter panel and measuring into the axle. This must be done with the car level from side to side.

17. Once everything has been double-checked you can tack weld the tabs the axle. After removing the upper bar from the tabs you can finish welding the tabs. This will prevent you from frying the bushings.

18. Reinstall the upper bar and snug all bar bolt with the axle still at ride height. **The 4” spacer can now be removed.**

19. A new 3/4" hole must be drilled for the sending unit wire. You can reuse the original grommet.

20. Apply thread sealant the air fitting and screw it into the top of the Shockwave.

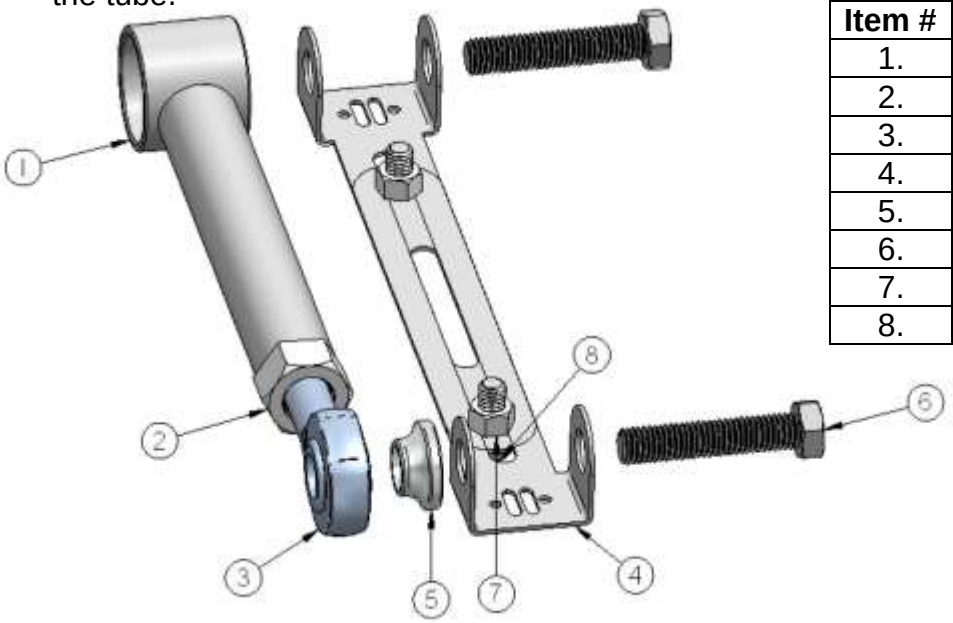
21. The Shockwave will be secured into place with 1/2" x 2 1/4" bolts and nylocs.

22. Check clearance with brake lines, parking brake and vent tubes.

23. The exhaust can either be rerouted under the axle or a turn down can be installed.

# Upper Bar Installation Jig

- This jig has been supplied to aid in the installation of the upper 4 link bar. It can be temporarily used to properly align, locate and weld the tabs onto the axle. It will also ensure that the mounting bolts are parallel to the ground.
- Follow the diagram below to set the jig to the same length as the upper bar, use the 3/8” x 3/4” bolt and nuts to set the length.
- Position the axle at ride height. Center the axle left to right between the quarter panels. Set pinion angle.
- Bolt one end of the jig to the cradle using a 5/8” x 2 ¾” bolt.
- Using another 5/8” x 2 ¾” bolt, fasten the axle tabs to the other end. The tabs must be bolted to the **outside** of the jig.
- Swing the bar down letting the tabs rest onto the axle. Trim the brackets as necessary to minimize the gap to be welded.
- Check pinion angle, ride height and axle center. Tack-weld the tabs in place.
- Remove jig and install upper bar.
- Repeat this process for the other side.
- Recheck pinion angle, ride height and axle center. (Sound familiar?)
- After the tabs have been tack welded on both sides, remove the upper bars to avoid melting the rubber bushings. Let the axle drop down for better access to the tabs. Lay 1” welds on the inside and outside of the tabs. Skip around from one side to the other to avoid overheating the tube.




| Item # | Description |
|---|---|
| 1. | Upper bar |
| 2. | 3/4”-16 jam nut |
| 3. | Heim end |
| 4. | Alignment jig |
| 5. | Aluminum spacer |
| 6. | 5/8”-11 x 2 ¾” bolt |
| 7. | 3/8”-16 nut |
| 8. | 3/8”-16 x 3/4" bolt |

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# Should I weld my AirBar 4 link assembly in?

Since we get this question quite often, it deserves a proper explanation.
The AirBar has been designed for bolt-in installation. We have paid special attention to interfacing with key structural areas of each vehicle, fastening bracketry in at least two planes to properly distribute load paths, and to using appropriate fasteners that roll, rather than cut, threads into the vehicle structure.
Having said that, you could potentially encounter a vehicle that has rust or collision damage in these areas. Or maybe you intend to consistently place the vehicle in severe racing applications with sticky racing slicks and high speed corners. In these cases it is perfectly acceptable to weld the AirBar components into your vehicle. Even in these severe cases we recommend that you install the entire AirBar assembly first [including the fasteners], and then use short 1” long tack welds to secure your installation. Remember that the vehicle structure metal is typically much thinner [.060”-.120” ]  than the .188” thick AirBar brackets. If you burn through the vehicle sheet metal structure you may end up with an installation that is weaker than before you tried to weld it.
The other reason to weld in your AirBar assembly is…you simply want to. You’re a welding kind of guy…that’s the way you’ve always done it…you have the skills and equipment to do it. In that case…weld away with our blessing!

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# Part # 21150701
## 7000 HQ Series ShockWaves
5” Stroke – .625” Bearing/.625” Bearing

| | | |
|---|---|---|
| 2 | 24090799 | 7000 Series rolling sleeve assembly |
| 2 | 24159999 | 5” stroke HQ Series shock |
| 4 | 90001994 | .625” I.D. spherical bearing |
| 8 | 90001995 | Bearing snap ring |
| 2 | 90002024 | Bearing eyelet |
| 8 | 90002043 | ½” ID Bearing Spacers |
| 2 | 31954201 | ¼” npt x ¼” tube swivel elbows |

SHOCKwave®
by Air Ride Technologies

# 7000 Series Shockwave

**Use these spacers when mounting on 5/8” bolt.**

| | |
|---|---|
| **Compressed Height** | **11.5”** |
| **Ride Height** | **14.5”** |
| **Extended Height** | **16.5”** |

**Use these spacers when mounting on 1/2” bolt.**

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**Installation Instructions**

# Part # 30334000 - 3 Gallon LevelPro Compressor System

**Components:**

| | | |
|---|---|---|
| 1 | 31920020 | Thomas 319 Compressor |
| 1 | 31934001 | 4 way RidePro air valve assembly |
| 1 | 31913100 | 3 gallon Aluminum tank |
| 5 | 31988150 | Air pressure sensor |
| 1 | 31398001 | RidePro LevelPro ECU |
| 1 | 31398002 | RidePro LevelPro Display |
| 2 | 99064002 | 6-32 x 3/8" Phillips pan head screw for display |
| 1 | 82010000 | Installation Guide |

**Wiring & Hardware:**

| | | |
|---|---|---|
| 1 | 31900031 | Display Harness |
| 1 | 31900020 | Air valve wiring harness |
| 1 | 31900006 | Air pressure sensor wiring harness |
| 1 | 31900048 | Main power / compressor harness |
| 1 | 90001924 | Fuse holder |
| 1 | 90001922 | 20 Amp fuse |
| 3 | 99104001 | 10-24 x 1" phillips screw |
| 3 | 99102002 | 10-24 Nylok nut |
| 3 | 99103001 | #10 SAE flat washer |

**Airlines & Fittings:**

| | | |
|---|---|---|
| 2 | 31940002 | 1/4" DOT airline – 30' roll |
| 6 | 31954201 | 1/4"npt x 1/4"tube elbow fitting - air springs / tank |
| 7 | 31954000 | 1/4"npt x 1/4" tube straight fitting - air valve |
| 1 | 31952150 | 1/8"npt female x 1/4" tube straight fitting - compressor |
| 1 | 31957003 | 1/8"npt nipple (install between FIT2150 & compressor) |
| 1 | 31957004 | 1/4"npt plug - plug extra supply port |
| 1 | 31959301 | Check Valve-**SCREWS INTO TANK FOR COMPRESSOR LINE** |

**Recommended Tools**

**THE CHECK VALVE SUPPLIED SCREWS INTO THE AIR TANK WITH AN AIR FITTING THREADING INTO IT. THE COMPRESSOR LINE WILL FEED INTO THE CHECK VALVE.**

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